

INTENSIVE MATHEMATICS (PBM1035)
Session December 2017
MODEL EXAM PAPER (QUESTION 5)

Instructions

- Answer ALL questions. Write your answers in the spaces provided.
- Show your working. You may use a non-programmable scientific calculator.

Question 1

Simplify the following indices without using calculator.

(a)

$$2^n \times (2^{-n})^3 \times 2^{2n}$$

(b)

$$\frac{(-2ab)^2}{2b}$$

(c)

$$3^m \times 27^m \times 9^{-m}$$

(d)

$$\left(\frac{81y^8}{16x^4} \right)^{3/4}$$

Question 2

Solve the index without using calculator.

(a)

$$5 \times 8^{2/3}$$

(b)

$$(-243)^{-2/5}$$

(c)

$$3 \times 5^x = \frac{3}{125}$$

Question 3

Evaluate the following without a calculator.

(a)

$$\frac{9^{\frac{1}{2}} 8^{\frac{1}{2}}}{2^{\frac{1}{2}}}$$

(b)

$$\frac{8^{1/3} 16^{1/3}}{32^{-1/3}}$$